

B2 range of 0.1 to 10 times an average grain diameter and ratios of grain diameters of adjacent grains are in the range of 0.1 to 10. The second sputtering target is further characterized in that the dispersion of the grain size ratio between adjacent grains in the target is within 30%.

---

Page 4, lines 20-24:

---

B3 A third sputtering target of the present invention is characterized in consisting essentially of high purity Nb of which the oxygen content is 200 ppm or less. The third target is further characterized in that the dispersion of the oxygen content in the target is within 80%.

---

Page 5, lines 11-19:

---

B4 In the third sputtering target, a content of oxygen as an impurity is set at 200 ppm or less. Further, the dispersion of the oxygen content in the target is set within 80%. A reduction of the oxygen content in the high purity Nb target enables to suppress a content of oxygen in a Nb film deposited therewith. Thereby,  $Ta_2O_5$  causing an increase of the resistivity in the interconnection film can be suppressed from generating, resulting in realization of low resistivity of the interconnection film.

---

Page 9, lines 15 to 21:

---

B5 Dispersion of the Ta content in the target of the present invention is preferably to be within 30%. Thus, by suppressing the dispersion of the Ta content low in the target, the resistivity over the whole interconnection film formed therewith can be lowered with reproducibility. The dispersion of the Ta content in the target is further preferable to be within 15%.

---

Page 9, line 22 to page 10, line 2:

---

B6 Dispersion of the oxygen content in the sputtering target of the present invention is preferably to be within 80%. Thus, by suppressing the dispersion of the oxygen content low in the target, the resistivity over the whole interconnection film

B6 formed therewith can be lowered with reproducibility. The dispersion of the oxygen content in the target is further preferably to be within 50%, and still further to be within 30%.

---

Page 10, line 28 to page 11, line 5:

---

B7 The present sputtering target consisting of high purity Nb is further preferable to control the size of the Nb grains constituting the target in the following way. That is, a grain diameter of each grain is in the range of 0.1 to 10 times an average grain diameter and a grain size ratio of adjacent grains is in the range of 0.1 to 10.

---

Page 12, line 26 to page 13, line 5:

---

B8 The dispersion of the grain size ratio of adjacent grains in the target is preferable to be within 30%. Thus, by suppressing the dispersion of the grain size ratio low in the target, the Nb film can be suppressed from the occurrence of giant dusts. The dispersion of the grain size ratio of adjacent grains in the sputtering target is preferable to be within 15%, and further preferable to be within 10%.

---

Page 13, lines 16-25:

B9 The dispersion of the grain size ratio denotes a value obtained in the following ways. For instance, for analysis, 9 specimens are sampled from a surface of the sputtering target of a diameter of 320 to 330 mm. The specimens each are sampled from the center of the target and positions located at 75 mm and 150 mm from the center in directions of X-axis and Y-axis relative to the center, respectively. The grain size ratio is measured of each of these 9 specimens for analysis. The dispersion is obtained from the maximum and minimum values thereof with the following formula.

---

Page 13, line 28 to page 14, line 8:

---

B10 For the Nb grains in the sputtering target, as mentioned above, the grain size ratio between the adjacent grains are particularly important to be in the range of 0.1 to 10. However, when the dispersion of grain diameter of the Nb grains is large, there are many grains different in sputtering rate to result in larger steps between the

adjacent grains. Accordingly, the grain diameters of the Nb grains are set in the range of 0.1 to 10 times an average grain diameter.

Page 16, line 28 to page 17, line 12:

The sputtering target of the present invention, though capable of using for forming interconnection films of various kinds of electronic devices, can be particularly preferably used in forming a Nb film as liner material to an Al film (or Al alloy film). A Nb film sputter deposited with a sputtering target of the present invention is 3000 ppm or less in Ta content, and further 2000 ppm or less, 1000 ppm or less, and the dispersion of the Ta content in the target is within 30%, and further within 15%. The oxygen content is 200 ppm or less, and further 150 ppm or less, 100 ppm or less, and the dispersion of the oxygen content is within 80%, further within 50%, and furthermore within 30%. In addition, the number of the dust particles (giant dust in particular) is remarkably scarce.

Page 25, Table 3:

Table 3

Target No.	Oxygen Content (ppm)	Dispersion of Oxygen Content (%)	Resistivity of interconnection ( $\mu\Omega\text{ cm}$ )
No. 1	10	82	4.2
No. 2	10	40	3.0
No. 3	50	23	3.1
No. 4	60	64	3.1
No. 5	100	27	3.2
No. 6	110	68	3.4
No. 7	140	38	3.5
No. 8	320	31	4.1
No. 9	630	22	4.4
No. 10	820	20	4.7

IN THE CLAIMS:

Kindly replace the corresponding claims with the amended claims that follow: